REMARKS

Claims 1 - 17 are currently pending in this application. The Abstract, claim 1, and limited portions of the specification are amended to correct typographical errors. No new matter is believed to be introduced by these corrections. Applicant notes that the majority of these corrections are identified in the Preliminary Amendment entered on October 31, 2001, which was filed with the original application. However, pursuant to 37 C.F.R. §1.215, none of the corrections were incorporated in Publication Number US 2002/0052716 A1.

In the Office Action, claims 1-17 stand rejected under 35 U.S.C. §103(a) for obviousness over several references. Specifically, claims 1, 7-9, 12, 14, and 16 are rejected over U.S. Patent No. 4,788,849 to Yonemura et al. ("Yonemura") in view of U.S. Patent No. 6,581,045 B1 to Watson ("Watson"). Claims 2, 10, 13, 15, and 17 stand rejected under 35 U.S.C. §103(a) for obviousness over Yonemura et al. in view of Watson as applied to claims 1 and 9, and further in view of Moore ("Moore"), "Cut Steam-Trap Costs; Identifying the best traps for a given application is the key to slashing maintenance costs." Lastly, claims 3-6 and 11 stand rejected under 35 U.S.C. §103(a) for obviousness over Yonemura et al. in view of Watson as applied to claims 1 and 9 and further in view of U.S. Patent Publication No. US-2002/0161614 A1 to Spira et al. ("Spira").

In response Applicant respectfully traverses each of these rejections.

REJECTIONS OF CLAIMS 1, 9, 12, 14, and 16 over Yonemura in view of Watson:

With respect to the rejections of claims 1, 9, 12, 14, and 16, the Office Action alleges that Yonemura teaches Applicant's steps of "inputting stored diagnostic result data and model confirmation result data," "calculating, based on said diagnostic result data, a first total steam loss amount due to malfunction of steam traps, the first total steam loss amount comprising aggregation of steam leak amounts of all the existing steam traps" and "calculating a monetary conversion value of an integrated value of a sum of the first total steam loss amount and the second total steam loss amount integrated for a predetermined period."

However, this assertion is incorrect as the Office Action more correctly concedes that Yonemura fails to disclose "calculating a second total steam loss amount," generating comparison data," and "outputting said comparison data." Without the method of

"calculating the second total steam loss amount," Yonemura cannot teach, disclose, or suggest the "calculating a monetary conversion value of an integrated value of a sum of the first total steam loss amount and the second total steam loss amount integrated for a predetermined period (emphasis added)."

The Office Action alleges that Watson teaches "calculating the current defect value and an anticipated value without the defects; another method for comparing financial data representative of repair/replacement costs; and outputting the above data to a specified user." In contrast to Applicant's claimed invention, Watson's teachings are limited to analyzing the present value of fixed or static assets, namely roofs of buildings, and the cost to repair or replace a defective roof. Watson does not contemplate calculating dynamic costs of steam loss as taught by Applicant.

In particular, among other steps, claim 1 recites the steps of

> "calculating, based on said model confirmation result data, a second total steam loss amount, which comprises aggregation of differences between inherent steam leak amounts of the existing steam traps under their normal working conditions and inherent steam leak amounts of recommended steam traps under their normal working conditions; [and]
>
> "calculating a monetary conversion value of an integrated value of a sum of the first total steam loss amount and the second total steam loss amount integrated for a predetermined period (emphasis added)."

Neither Yonemura nor Watson teach or suggest these methods. In contrast, Yonemura at column 2, lines 9-14 and lines 55-59 is limited to display of "...leakage of each trap, summation and analysis of total leakage of all traps and the leakage in terms of the amount of monetary cost involved." Yonemura exemplifies the short-comings of the prior art in that it does not teach, disclose, or suggest Applicant's calculation of second total steam loss amount.

In further contrast, Watson is devoid of any teaching or suggestion related to steam trap technology. Moreover, Watson does not teach a "current defect value" or "an anticipated value without the defect" (Office Action p. 3, lines 16-17). Watson is instead limited at column 10, lines 52-58 to identifying roof defects and recording severity levels thereof, namely "low," "medium," and "high" levels. Watson at column 8, lines 49-67

teaches processing of the defects and other data with a deduct processor 130 that generates a roof condition factor. At column 8, lines 33-51, Watson describes using the preceding data to estimate the useful life of the roof 102. Watson also does not describe or suggest "calculating values for assets with and without defects" as asserted on page 3, line 21 of the Office Action. In essence, Watson is limited to assessing static costs of repairing or replacing roofs. Thus, Watson does not account for the appreciable differences between Yonemura and the present invention that would render obvious the invention as recited in claims 1 and 9.

Clearly, Yonemura and Watson, whether considered alone or in combination, fail to disclose or suggest methods of "calculating a second total steam loss amount" or "calculating a monetary conversion value of an integrated value of a sum of the first total steam loss amount and the second total steam loss amount integrated for a predetermined period." Accordingly, withdrawal of the obviousness rejections of claims 1 and 9, as well as the dependent claims (2-8, and 10-17), is appropriate and is respectfully requested.

Claim 7 depends from claim 1 and stands rejected under 35 U.S.C. §103(a) for asserted obviousness in view of the Examiner's official notice "that a contract for asset replacement between a customer and a seller includes a divided payment contract using a credit loan company is old and well known." This rejection is inappropriate pursuant to MPEP §2144.03, which states in relevant part that "it is never appropriate to rely solely on 'common knowledge' in the art without evidentiary support in the record, as the principal evidence upon which a rejection was based," and further that "there must be some form of evidence in the record to support an assertion of common knowledge."

Here, neither Yonemura nor Watson teach, disclose, or suggest divided payment contracts as recited in claim 7. Accordingly, this rejection should be withdrawn. In the alternative, Applicant requests that the Examiner produce authority and relevant documentary evidence supporting this rejection.

The Office Action rejects claim 8 as being obvious over Yonemura in view of Watson on the grounds that Watson teaches "when determining defects of an asset to also determine defects of associated parts (col. 10, lines 52-58)." However, Watson at column 10 describes:

> "In determining defects associated with base flashings, and with respect to other structural elements of the roof 102, it is preferable to determine not only the existence of a defect, but also the "severity" level

> of a defect. For example, defects associated with bituminous base flashings may be rated as either of a "medium" severity level, or, alternatively, of a "high" severity level."

In contrast, claim 8 recites:

> "The method according to claim 1, wherein in the step of diagnosing the working conditions of the existing steam traps for generating the comparison data or in the step of inspecting the steam traps under the maintenance contract concluded, the system effects the further step of inspecting working conditions of auxiliary plant devices other than and relating to the existing or newly installed recommended steam traps."

Applicant's invention is directed to optimizing steam trap performance to reduce costs associated with plant wide steam losses. In claim 8, the invention is further directed to optimizing performance of non-steam trap auxiliary plant devices.

In contradistinction, the Watson roof repair method is limited at column 10, lines 52-58 to assessing severity of defects of sub-components of the roof, namely, base flashings. Thus, Watson is focused on defect assessment of components and sub-parts thereof (i.e., roofs and flashings, etc.) The present invention teaches away from Watson and is not limited to inspecting parts and sub-parts thereof. Instead in claim 8, the present invention is directed to diagnosing and inspecting steam traps as well as inspecting other non-steam-trap devices, namely plant-wide auxiliary devices. The invention as recited in claim 8 is supported in more detail in paragraphs 38, 39, and 110 of the present application, among other places.

REJECTIONS OF CLAIMS 2, 10, 13, 15, and 17 over Yonemura in view of Watson and further in view of Moore:

Claims 2, 10, 13, 15, and 17 are rejected as being obvious over Yonemura in view of Watson as applied to claims 1 and 9, and further in view of Moore. In specifically rejecting claims 2, 10, and 13, the Office Action concedes on page 6, lines 4-5 that Yonemura does not teach the claimed method "wherein calculating an estimated value of the second total steam loss amount is based on said model confirmation data." No further support is cited to overcome this deficiency of Yonemura. While bypassing this deficiency, the Office Action on page 6, lines 9-15 realleges that column 4, lines 47-55 of Watson teaches calculating a second steam loss based on model confirmation data. The Office Action further

avers that Moore "teaches using a ratio, failures/inspections, during inspection of steam traps (para. 11)."

However, Watson does not teach or disclose these methods but instead at column 4, lines 47-55 describes:

> "First processing means are utilized to process the data representative of the problems or defects, and generate condition factor signals representative of a figure of merit of the condition of the asset. Second processing means are utilized to process data representative of the generic information, and generate serviceability estimate signals representative of the anticipated useful life of the asset, based upon the condition factor signals and the generic information" (emphasis added).

According to Watson, the second processing means processes data to generate estimates of the anticipated useful service life of the asset or roof, which is markedly different from the calculation of the second total steam loss of the present invention.

In further contradistinction to the present invention, Moore at paragraph 11 does not describe or suggest Applicant's claimed "trap number ratio" but instead describes:

> "The ratio, failures/inspections, for a given trap, is helpful for gauging the efficacy of a given inspection frequency. A ratio value near 1.0 suggests that more-frequent inspections are necessary. The lower the value, of course, the better."

Moore's ratio has the limited utility of assessing optimum inspection frequency to improve and reduce mean time to repair or "MTTR" of maintenance crew response times.

In contrast to Yonemura, Watson, and Moore, the present invention as recited in claim 2 includes, among other distinguishing methods, the methods wherein:

> "on a trap number ratio comprising a ratio between the number of said some steam traps diagnosed and the total number of the existing steam traps; ... calculates an estimated value of the second total steam loss amount based on said model confirmation result data and also on said trap number ratio; ..." (emphasis added).

The trap number ratio of the present invention is further described in paragraphs 27, 56, 86, 91, and 100, among other places. Neither Moore nor Watson account for the substantial short-comings of Yonemura, which also fails to teach or suggest the trap

number ratio, the calculated estimated value second total steam loss, among other failings. Further, neither Watson nor Moore, when viewed alone or in any combination, account for the substantial differences between the "trap number ratio" of the present invention and the inspection frequency ratio of Moore; or the "second processing means" of Watson and the "estimated value of the second total steam loss amount" of the present invention.

Claim 2 depends from claim 1, and claims 10 and 13 depend from claim 9, and these dependent claims further distinguish the present invention from Yonemura, Watson, and Moore, whether viewed alone or in combination. Therefore, withdrawal of the rejections of claims 2, 10, and 13 is necessary and hereby requested.

Claims 15 and 17 are rejected as being obvious over Yonemura in view of Watson because in column 4, lines 47-55 of Watson allegedly "teaches a method for calculating a second defect," which renders obvious the methods of claims 15 and 17. In claims 15 and 17, "the second calculating means calculates the estimated value of the second total steam loss amount for each of a plurality of models of recommended steam traps." As shown above, Watson does not describe or suggest Applicant's claimed second calculating means or the alleged "calculating a second defect" anywhere in its disclosure. Watson is instead limited at column 10, lines 52-58 to identifying roof defects and recording severity levels thereof, namely "low," "medium," and "high" levels. Watson at column 8, lines 49-67 processes the defects and other data with a deduct processor 130 that generates a roof condition factor. At column 8, lines 33-51, Watson describes using the preceding data to estimate the useful life of the roof 102. Accordingly, Watson alone or in combination with Yonemura cannot render obvious claims 15 or 17.

On page 7, lines 1-3, the Office Action asserts that motivation to combine Watson with Yonemura is found in Watson's asset management system that allows a user to evaluate the effect of potential repair/replacement activities on the condition of the asset (column 4, lines 36-40; column 6, lines 42-43). Watson's disclosure in fact describes "the invention, an asset management system is adapted to provide an empirical quantitative analysis of the condition of a physical and structural asset, and allow a user to evaluate the effect of potential repair/replacement activities on the condition of the asset" and "that an asset management system in accordance with the invention can be employed for numerous types of asset components." However, without more, Watson's general statements that

allegedly support a motivation to combine do not account for the appreciable short-comings of Yonemura, Watson, and Moore.

For each of these reasons, Applicant requests that the rejections of claims 15 and 17 be withdrawn.

REJECTIONS OF CLAIMS 3-6 and 11 over Yonemura in view of Watson and further in view of Spira:

Lastly, the Office action rejects dependent claims 3-6 and 11 as being obvious over Yonemura in view of Watson and further in view of Spira on the grounds that Spira further "teaches a method for providing a contract between a user and a seller, and also providing a service manual based on inspection of the asset (Para. 36, 41 and 50)" and that Spira "also provides motivation for a service manual by mentioning that a manual leads to the application of the concepts to a maintenance project at a plant (Para. 41, lines 6-7)."

More specifically, Spira actually describes in figure 1 and paragraph 29 "an architecture, including as primary elements a process description manual 10 (emphasis added)," which is further described in paragraphs 49-50 wherein:

> "a first portion 170 of the process manual is an introduction, followed by a section on the theory of management technology 172 and then a portion on marketing 174. Under the marketing portion 174 of the manual are parts relating to analysis of business segments 176, regional markets and priorities 178, customers 180, competitors 182, the plant's market position 184, the market position of the product sales departments 186 and a project list of product sales departments 188.
>
> [0050] The next section of the process manual 10 relates to sales 190, including sales tools 192, presentation guidelines 194, proximity to customer 196, preference to key data 198, leaflets and brochures 200, fliers to first contacts 202, and prequalification 204. Under section 5 is found contract partners 206 for the maintenance services, which has the subsections of contract forms 208, sample contracts 210, contracts with subcontractors 212, contracts with general contractors 214, consortium contracts 215, contracts with joint venture partners 216, internal agreements with product sales departments 218, internal agreements with regions 220 and partner agreements 222."

In contrast, the present invention according to claim 3 recites:

> "3. The method according to claim 1, the system effects the further step of adding, to a contract for lump-sum replacement of the steam traps to be concluded between the customer and a seller of the steam traps, a

> maintenance contract for the seller to act on the customer's behalf for inspection of all of the recommended steam traps newly installed in the plant and renewal of service book of these steam traps associated with the inspection during the predetermined period after the lump-sum replacement of the steam traps (emphasis added)."

Applicant's claimed "contract for lump-sum replacement of the steam traps" of the present invention is described throughout the present application and also in paragraph 87 as specifically pertaining to the "lump-sum replacement required for replacing all of the existing steam traps 2 including those steam traps operating normally in the plant 1 by the recommended steam traps." Spira does not teach or suggest this "contract for lump-sum replacement" and further does not account for the substantial other differences between the present invention and Yonemura, Watson, and Moore.

Additionally, Applicant's claimed "maintenance contract for the seller to act on the customer's behalf for inspection" is similarly absent in Spira. While Spira generally describes maintenance contracts, he falls short of the claimed maintenance contract, wherein the seller acts on the customer's behalf for inspections.

Furthermore, Applicant's claimed "renewal of service book" is described in more detail in paragraph 85 as a service book 8 for:

> "the entire plant in a predetermined format including items of the installed area, serial service number, model, bore diameter, usage, surface temperature, vibration, working steam pressure, working condition determination result (normal or not), steam leak amount due to the malfunction of the steam trap, its monetary converted value and the diagnosis date, etc. (emphasis added)"

The Spira process description manual 10 does not teach, disclose, or suggest the service book 8 of the present invention.

Claim 4 depends from claim 3 and further recites service book accessibility via communication means. Claim 5 depends from claim 1 and further recites "storing a steam trap service book comprising said inputted diagnostic result data in a database maintained by the seller." Claim 6 also depends from claim 1 and further recites "a contract for lump-sum replacement of the steam traps to be concluded between the customer and a seller of the steam traps, a warranty contract for the seller to warrant the newly installed

recommended steam traps for the predetermined period after the lump-sum replacement of the existing steam traps." These methods are not taught or suggested by Spira.

More specifically, the rejection of claim 4 on page 8, lines 1-8 of the Office Action, is incorrect because the cited Spira disclosure does not disclose the steam trap service book 8 of the present invention. While Spira discloses "network connections," it does not account for the considerable differences of the present invention either alone or in combination with Yonemura and Watson. The Office Action on page 8, lines 10-18 inappropriately rejects claim 5 and inaccurately asserts that Spira discloses storing the service book in a database. Spira's disclosure of a method of storage does not surmount its other short-comings, and further does not overcome the deficiencies of Yonemura and Watson. Claim 11 is similarly rejected on page 9, lines 5-13 with the allegation that Spira teaches a service manual that has a predetermined format. However, neither the cited portions of Spira nor any other disclosures of Spira describe, teach, or suggest the predetermined format of claim 11. Applicant describes his predetermined format in paragraph 85, which is set forth above. As already explained above, Spira lacks any teaching or suggestion of the service book 8 of the present invention.

Claim 6 is rejected on page 8, lines 20-22 through page 9, lines 1-3 on the basis that Spira teaches in paragraph 50 providing maintenance and sales agreements. This rejection is inappropriate for all of the previously stated reasons, but especially since claim 6 of the present invention is directed to "... adding, to a contract for lump-sum replacement of the steam traps to be concluded between the customer and a seller of the steam traps, a warranty contract for the seller to warrant the newly installed recommended steam traps for the predetermined period after the lump-sum replacement of the existing steam traps" (emphasis added). Spira does not teach or disclose a warranty contract. Neither do Yonemura, Watson, or the other cited references teach or suggest the warranty contract of claim 6.

For each of these reasons, it is also appropriate to withdraw the rejections of claims 3-6 and 11, which is hereby requested.

Based on the foregoing, Applicant respectfully requests withdrawal of all rejections of the claims and favorable reconsideration and allowance. Should the Examiner wish to discuss any of these issues in further detail, the Examiner is invited to contact Applicant's undersigned representative by telephone at 412-471-8815.

Respectfully submitted,

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